Open Space Planning for Five Deerfield Watershed Towns: Mapping and Geographic Analysis

Prepared by: Dodson Associates, Ltd.

Funded by and carried out in partnership with
the Executive Office of Environmental Affairs
and the Massachusetts Watershed Initiative
July, 2003

Open Space Planning Process and Methodology

Background

The Deerfield Watershed is blessed with a remarkably diverse landscape, a landscape shaped by both natural and cultural forces over thousands of years. Its basic form is rooted in the geology of the region, shaped by the glaciers of the last ice age, and molded since by the action of wind, water, and communities of plants and animals. From the largely forested hill towns, streams drain a series of valleys, merging eventually into the Deerfield River. Rich farmland may be found along these stream corridors, deposited by centuries of seasonal flooding and improved by countless cycles of flooding and meadow growth associated with the ecology of the beaver.

The Deerfield Watershed is remarkable for its rich diversity of landscapes. Unlike many other areas in the Northeast, it still has large areas of wild land (a Conway beaver pond, left) and lively town and village centers, such as Ashfield (right). In between these extremes lies a rich working landscape of farms and forests.

Overlaid with this natural landscape is a cultural landscape of farms, forests, mill villages and town centers that evolved in an intimate relationship with the land in three centuries since European settlement and previous millennia of use by Native Americans. Traditional land uses and settlement patterns were based on local resources of farmland, timber, and water power. Village centers grew in areas with potential for water power, on principal roads, and at the natural center of agricultural districts. The natural systems that underlie these human settlement patterns were not erased, but rather incorporated into a larger composition that is both functionally stable and beautiful to look at. What was passed down to current residents of the Deerfield Watershed is thus a rich landscape heritage, one that offers a balance of clean water, a healthy environment, scenic resources, and plentiful outdoor recreation -- all of which adds up to a high quality of life.

Although still largely unspoiled, the watershed is threatened by the sprawling suburban development that has overtaken areas closer to major cities. This is particularly noticeable because this new development, no matter where it is located, tends to follow the same monotonous patterns, reducing everything to a simple formula repeated over and over. Residential development, for which most of the areas is zoned, is for the most part restricted to one or two-acre lots spread out along broad cul-de-sacs. Commercial development extends along the state highways outside of town centers. Old commercial uses, often on small lots in village centers, are abandoned as new ones are built farther out. Meanwhile, Main Streets struggle to attract tenants, and convenience stores and self-storage structures replace historic buildings.

For years, state conservation agencies, town governments, and other public and private groups have been working to preserve this landscape and to ensure public access to open space. Yet the results of these efforts are sometimes diluted because they are not coordinated by an overall protection strategy, and often proceed on an ad hoc basis as opportunities arise. State agencies and non-profit groups commonly pursue relatively narrow aims, usually focused on preservation of sensitive environmental resources. Meanwhile, local efforts, including changes to the zoning bylaws that shape growth patterns, are developed largely through plans that end at town borders. The result has been that large amounts of land have been preserved in the Deerfield Watershed, but the overall pattern is a patchwork of different pieces, rather than a unified network of protected open space.

While state agencies and non-profits will continue conservation efforts for many important sites, linking these areas into a permanent network of open space must involve local open space planning. Prepared under guidelines established by the Division of Conservation Services, the local open space plan provides the detailed mapping and analysis needed to make good decisions about zoning policy and municipal conservation efforts. Yet many towns in Western Massachusetts lack the resources to prepare an Open Space Plan, or even to complete the necessary mapping to understand current state of open space protection. Recognizing this, the Massachusetts Watershed Initiative of the Executive Office of Environmental Affairs contracted with Dodson Associates to work with the towns of Ashfield, Buckland, Conway, Hawley, and Shelburne to develop information to support local open space planning, based on a rigorous process that would fostor regional coordination of local implementation efforts.

The incredible diversity of open space resources in the Deerfield Watershed cannot be experienced within a single town. Only by working together can the separate towns protect the full spectrum of landscapes and recreational opportunities that creates the sense of place and quality of life that attracts people to this unique region.

A Bottom-Up Planning Process

The open space planning process was designed to work from the bottom up, and to be detailed enough to be meaningful for local planning, but simple enough to generate clear regional priorities upon which a watershed-wide strategy could be based. The answer was a process that began at the local level, using a common methodology to bring each community to the same level of information and understanding. With each town on a common footing, communities, both large and small, are able to confidently evaluate regional priorities and potential action strategies.

Each town went through an individual process of inventory and analysis, resulting in preliminary maps of open space priorities in each community. These local plans were then compiled into a series of regional inventory and priority plans for review at several regional meetings. The results are designed to provide a detailed, but flexible base of information that can be used by local boards and commissions as well as state agencies to achieve shared goals for landscape protection.

The method followed a traditional landscape planning model: data about different types of

resources were compiled; inventory maps were prepared showing the location and patterns of these resources; then these inventory maps were overlaid with each other to identify those areas and connecting corridors with multiple resource values.

The planning process was also designed to avoid the sort of "single-issue" open space planning that can happen when plans are prepared by a town board or state agency concerned with only one type of resource. This can lead, for example, to open space plans that do a good job of protecting wildlife habitat while ignoring scenic views, or bike paths proposed for sensitive wetland areas. To avoid these problems, the process looked at three distinct resource types: **natural resources**, such as wetlands, aquifers and wildlife habitat; **cultural resources**, such as historic mills, farmland, scenic vistas and rural landscapes; and **recreational resources**, like hiking trails, ballfields, and fishing sites. Priorities for each of the three resource themes were mapped out first, then overlaid with each other to identify key open space parcels, as well as the potential linkages between them. The resulting plans help towns preserve ecological resources important for a healthy environment as well as the visual character and quality of life that make the Deerfield Watershed such a great place to live, work and play.

Another benefit of this approach is that it provides a forum for resources that are often given short shrift in open space planning.

Fifth graders at Ashfield's Sanderson Academy listened to a presentation about the project and helped to identify special places in their town.

Thus, local historical societies, hunting & fishing clubs, snowmobile and horseback riding clubs and others were allowed to participate in mapping and planning for resources that otherwise might be overlooked.

Public Participation Process

While the actual process varied somewhat from town to town, public participation revolved around a series of four meetings in each community. **The first meeting** was designed to present the project and organize local volunteers. The consultant team introduced the project, presented the critical lands inventory maps, and posted wall-size base maps for review. Attendees were asked to volunteer to help identify important resources, and those that did so were divided into three sub-groups to focus on the three key resource themes. Each of these subgroups then met with a member of the consultant team to review the base maps and existing information, to discuss what additional information would be needed to move forward, and to strategize about how to get it and put it on the maps.

Both local volunteers and members of the consultant team came back to the **second meeting** with additional information, sketch plans, and reports providing information about each of the three resource themes. Each group was asked to present the information they collected, and the consultants led discussion about what conclusions could be drawn and what additional information was needed. Throughout the process the emphasis was on understanding the systems that underlie the occurrence of a particular resource. For example, we want to know not only that a rare orchid has been

found in a particular place, but also why it is there. What is the ecosystem that supports that species, and how big is the surrounding landscape upon which it depends? Likewise, if certain structures have been identified as historically significant we want to know not only where they are, but also how do they fit into the larger landscape history of the town? What stories do they tell about the history of the community?

The consultant team returned to the **third meeting** with revised maps of natural, cultural and recreational resources for review by the town greenspace committees. Attendees were led in a discussion of important sites and potential linkages for each of the resource themes. Preliminary overlays were presented that began to explore how the three principal resource themes overlap, and various systems for prioritizing open space values were discussed.

At the **fourth meeting**, the consultant team presented a final draft of each town's resource inventory and priority maps for review and discussion. These were compared with maps of lands already protected to examine potential gaps in important resource corridors and opportunities to incorporate larger resource systems into lands already preserved. Maps showing various ways of prioritizing open space were presented for review. While each town will have to sort out its own priorities, the principal recommendation is that those areas that include a balance of natural, cultural, and recreational resources are key to the visual

An extensive series of meetings in each community allowed residents to contribute to the process, and brought together diverse local interests in conservation, historic preservation, and recreation.

character and quality of life in the Deerfield Watershed,. These areas represent the common ground where the interests of many diverse groups come together, and therefore should be the focus of shared conservation efforts.

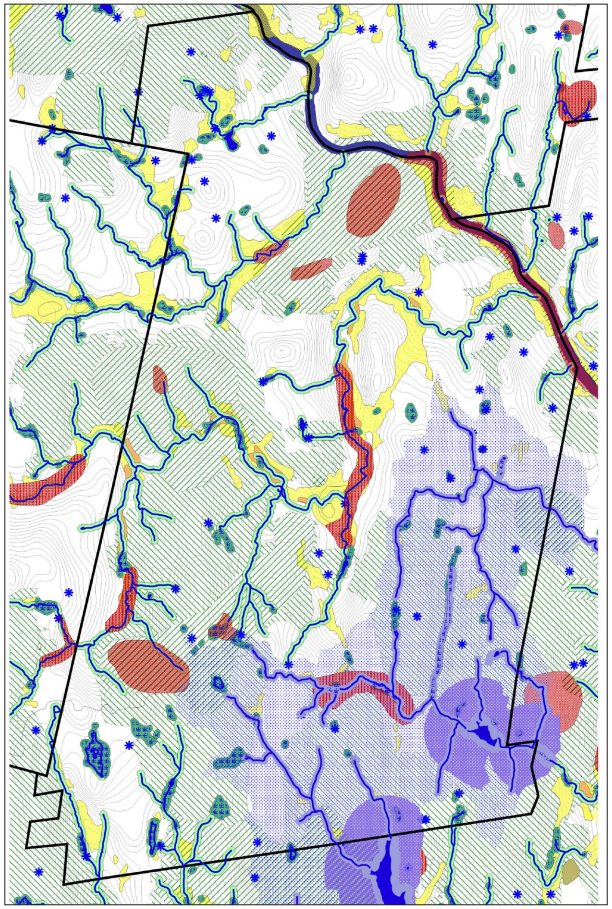
As the local process was proceeding, the local greenspace volunteers, together with other town officials and interested citizens, were invited to convene at several **regional workshops**. At the first workshop, held in conjunction with the Deerfield River Watershed Association,maps were presented that compiled all the local data into a single inventory for each resource type. Participants broke into small groups to discuss the map results and approaches to setting regional priorities for greenspace protection. At a second workshop at the end of the local meeting series, revised maps were presented for review, along with several alternatives for setting priorities for action. Extensive discussion helped determine the final set of inventory and resource priority maps that are found in this report.

Methods of Mapping and Geographic Analysis

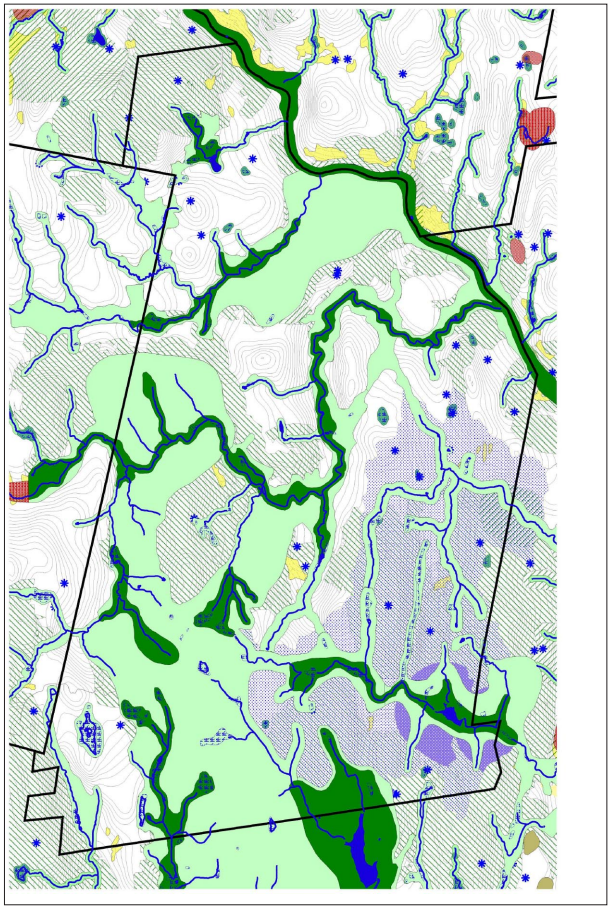
While the process of mapping and analysis generally followed a traditional planning model, the way information is recorded and presented in the final set of maps was designed to encourage an unusually broad approach to identifying open space resources. While there is no "right way" to do this, by explicitly developing separate maps for natural, cultural, and recreational resources, this approach requires development of a much more complete understanding of all three areas than is usually attained. At the same time, the limitations on volunteer time and project budget forced the project to make good use of existing data, with carefully targeted development of additional information. The final content of the maps represents the collective review of all the local committees, which were quite consistent in their reaction and recommendations. As described below, the three primary themes represent an objective perspective and a reasonable consensus about which resources are of most concern to towns as they try to protect the environmental health and quality of life in West County.

Natural Resources

Natural resources were mapped primarily using the most current data available from the Massachusetts Geographic Information System, updated with local knowledge and experience. Perhaps the most critical natural resource for Franklin County Communities is **water supply**, which was mapped using three types of areas: aquifers, aquifer recharge areas, and wellhead protection areas. **Surface waters systems** are critical to the ecology of the county. These included rivers, streams, ponds, and wetlands. A three hundred foot buffer around these surface waters was shown to indicate the area that is most critical to protect both wildlife habitat and water quality. Overlaid with these physical resources were **rare species habitat** areas identified by the Massachusetts Natural Heritage Program. These include documented occurrences of rare species as well as surrounding areas that are critical to their ongoing survival. Finally, in our discussions with scientists at the University of Massachusetts and the Nature Conservancy, it was determined that of all factors in measuring wildlife habitat, the presence of large tracts of undeveloped forest – especially when connected to river and stream corridors – provides the highest value for preservation of all species of wild plants and animals. These were incorporated using the color orthophotos available from MassGIS. Finally, the recent statewide Biomap project, designed to depict, at a broad scale, areas with the highest ecological importance, was overlaid as an aid to identify the areas likely to be of the greatest importance on a regional scale.



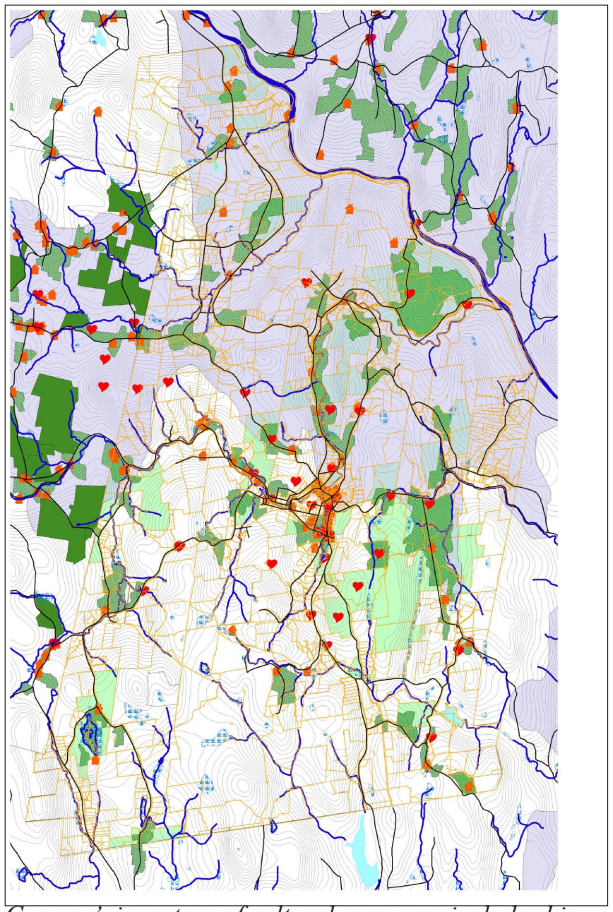
The natural resources inventory of Conway included wetlands, streams and water supply protection(blue), aquifers (yellow), and natural heritage areas(red).



Areas with the highest concentration of natural resource values were designated as natural resource priorities (dark green). Secondary priorities (light green) show the areas that have fewer natural resources, but serve an important role in the larger ecological system.

Cultural Resources

While natural resources evolved and continue to grow without human influence, cultural resources generally include anything that people have made, or that people care about. These include historic sites, scenic areas, working agricultural landscapes, etc. This includes both the kind of things that can be objectively described, such as an historic farmstead that Washington slept in, as well as places that are important to the history of a particular culture or the ongoing life of a town. Like natural resources, the study of cultural resources can engender a long list of potential factors; in order to fit the analysis into the time that was available we identified three key groups of cultural resources: historic resources, scenic



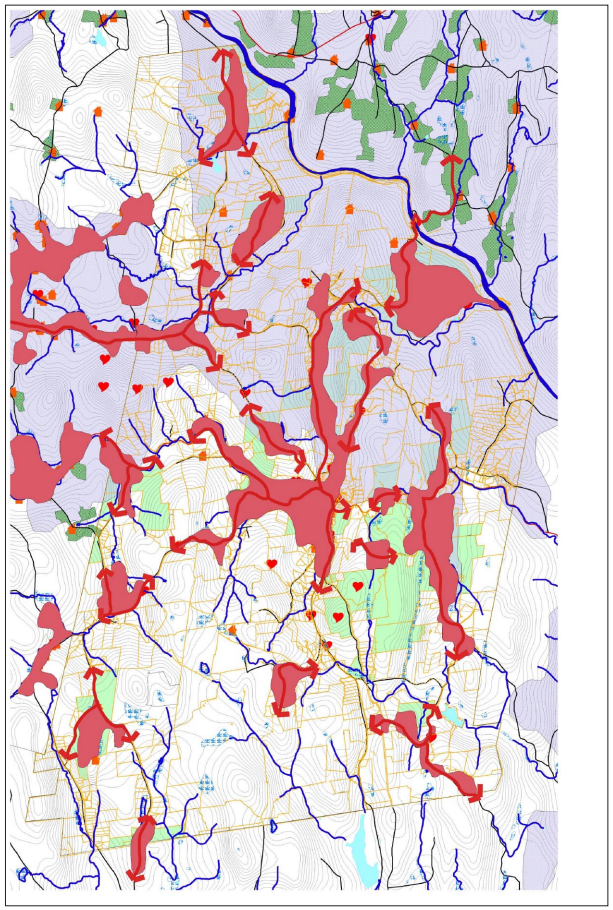
Conway's inventory of cultural resources includes historic sites (orange houses), heritage landscapes (green), scenic areas (blue hatch), and special places (hearts).

landscapes, and special places.

The inventory of historic resources began with **historic and archaeological sites** that have been identified at a statewide level by the Massachusetts Historic Commission. Sites on the MHC street listing were located on the maps and digitized, and additional sites identified by local historians were added. Most of these sources, however, tend to focus on a specific structure or group of buildings, without mapping the landscape context. By this we mean that area which was traditionally connected functionally to the structure or site, and which continues to be important to maintaining its visual character. Many old New England homesteads have been protected, for example, while the fields and woodlots that surround them were developed, destroying the historic landscape resource itself, but as importantly diminishing the value of the structure at its center. For our purposes, then, the task was to identify those historic sites and surrounding landscapes that still exist, drawing a boundary on the maps to mark the minimum area that should be protected or managed to protect that cultural landscape. These areas, which include agricultural landscapes, mill sites, and historic village centers, are identified as **heritage landscapes**.

The evaluation of **scenic landscapes** likewise began using a statewide inventory known as the Massachusetts Landscape Inventory. Volunteers on the local committees enhanced this information using town reports and windshield surveys to identify areas with high scenic quality at the neighborhood scale, with an emphasis on those that are visible from public areas. Specific views or vista points were also identified.

The final category of cultural landscapes that were identified was "**special places**." These include all the places in town that people care about, those "places in the heart" that may not be valuable in and of themselves, but which



Just like the map of natural priorities, this map of cultural resource priorities is designed to show the overall pattern of historic sites and other cultural resources. The orange areas represent zones with an unusual combination of historic sites and surrounding heritage landscapes, scenic roads and vistas, as well as the special places valued by local citizens. The red arrows identify cultural corridors, such as historic roads or river valleys, that connect these cultural resources together.

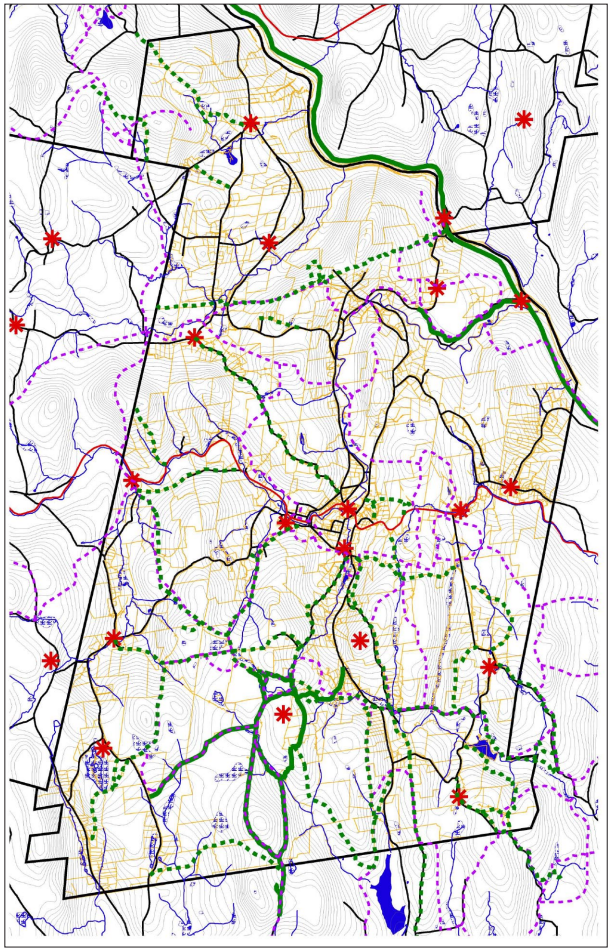
are nevertheless critical to local character and quality of life. They may be scenic spots or historic sites, just as often they are local hangouts, places where people go to meet each other, or just to get away from it all. In

some towns these were compiled from existing surveys or planning studies; in others volunteers posted maps in public places and asked people to mark down their special places.

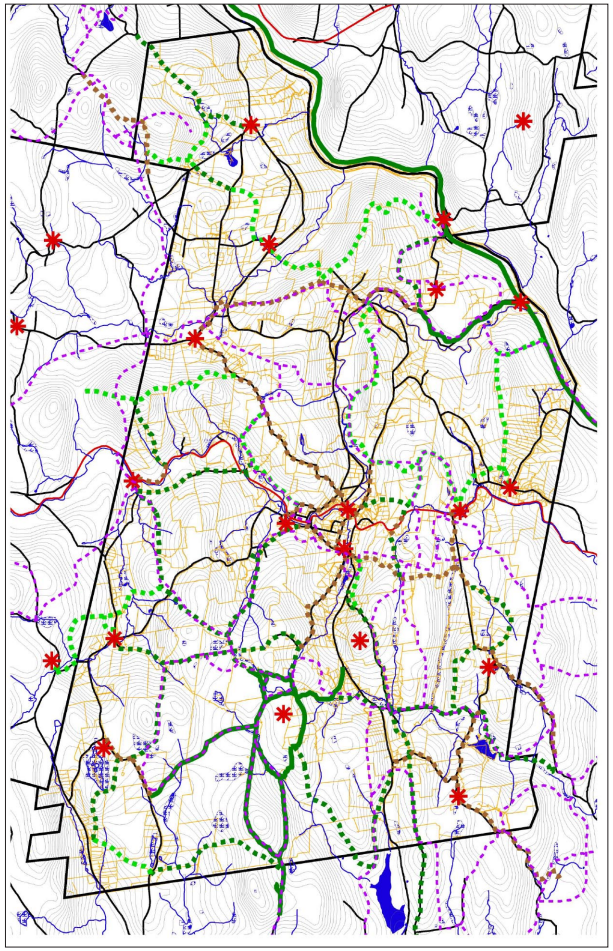
Recreational Resources

The focus of the recreational resource analysis was opportunities for active recreation, especially trails and other recreational routes. Existing **hiking trails** were identified by local volunteers on USGS base maps, and compiled from trail maps published in trail guides. Snowmobile and Horseback Riding Clubs provided maps of their trails, many of which they maintain and manage through informal agreements with landowners. Potential future trails were identified based on aerial photographs and USGS maps, with a combination of local knowledge of informal trails and expert opinion about what might be possible using a combination of public roads, utility corridors, overgrown woods roads, etc.

Lastly, **destination points** were identified, both to locate fixed recreation sites like parks, playgrounds and schools, and to evaluate the potential of the various trail systems in developing a network connecting important points around the county. These points were divided into primary destinations, such as village and town centers, and secondary destinations, such as parks, playgrounds, conservation areas, and schools.



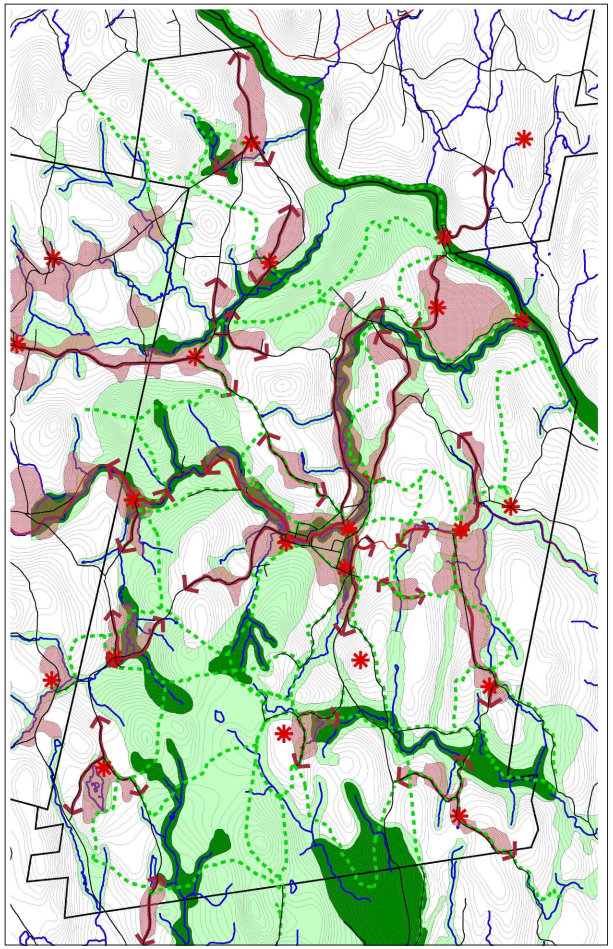
The recreational inventory for Conway included existing and potential hiking trails (green) and snowmobile trails (purple). Destination points (red stars) indicate the places that a future trail system might connect to.



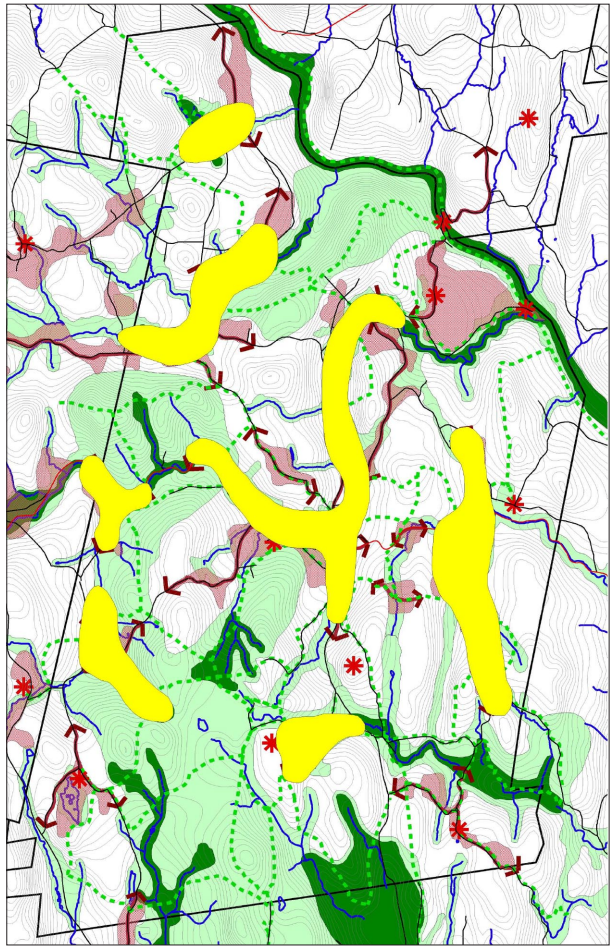
The map of recreational resource priorities establishes goals for a future network of trails, with missing connections drawn in.

Defining Local Priorities

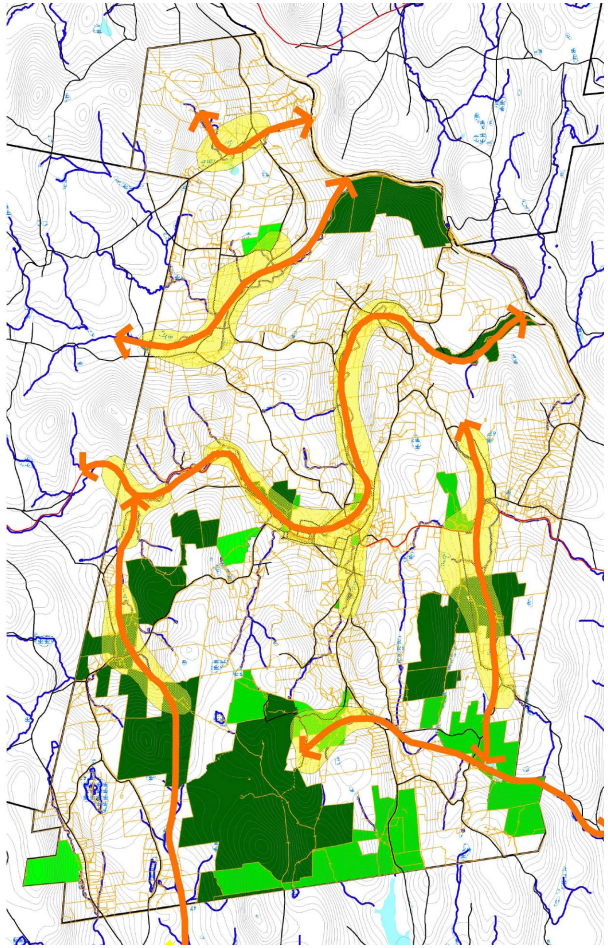
Once the resource inventories and priority maps were completed for each of the three resource themes, the priority maps were overlaid to identify areas with a concentration of many different kinds of resources. First natural and cultural priorities were overlaid, then recreational resources were added. Through this process, areas were identified which should be the focus of conservation efforts and other actions by the town. These focus areas were then overlaid with a map of land which is already protected, thus highlighting key gaps in a townwide network of protected resources.



The final step in the local planning process is to overlay the separate resource maps to identify areas rich in natural and cultural resources, and recreational opportunities. These are often the most important to protecting the unique character of the community.



Through discussion at the final local meetings, focus areas were identified (yellow). These represent the best opportunities to preserve multiple resources while providing sites for public recreational access, historic interpretation, nature trails, and so on.



Ovcrlaying the focus areas and key resource corridors with a map of land which is already protected (green) identifies important threats to Conway's rural character and quality of life.

In discussing potential action strategies with participants in each community, the project team emphasized that open space planning is about much more than outright **conservation** of important natural resources -- it also involves understanding and **celebrating** cultural resources and **connecting** recreational resources within and between towns. Just as rare plants and animals depend on a larger ecosystem for their survival, historic sites are part of a larger system, sometimes called the cultural landscape, that includes traditional land uses like farming, forestry, and village life. By understanding that larger landscape, communities can help preserve and celebrate their stories. This can enhance the livability of the area for existing residents; it is also of potential economic importance in attracting new residents and businesses to the region, promoting cultural tourism, etc.

Regional Mapping and Recommendations

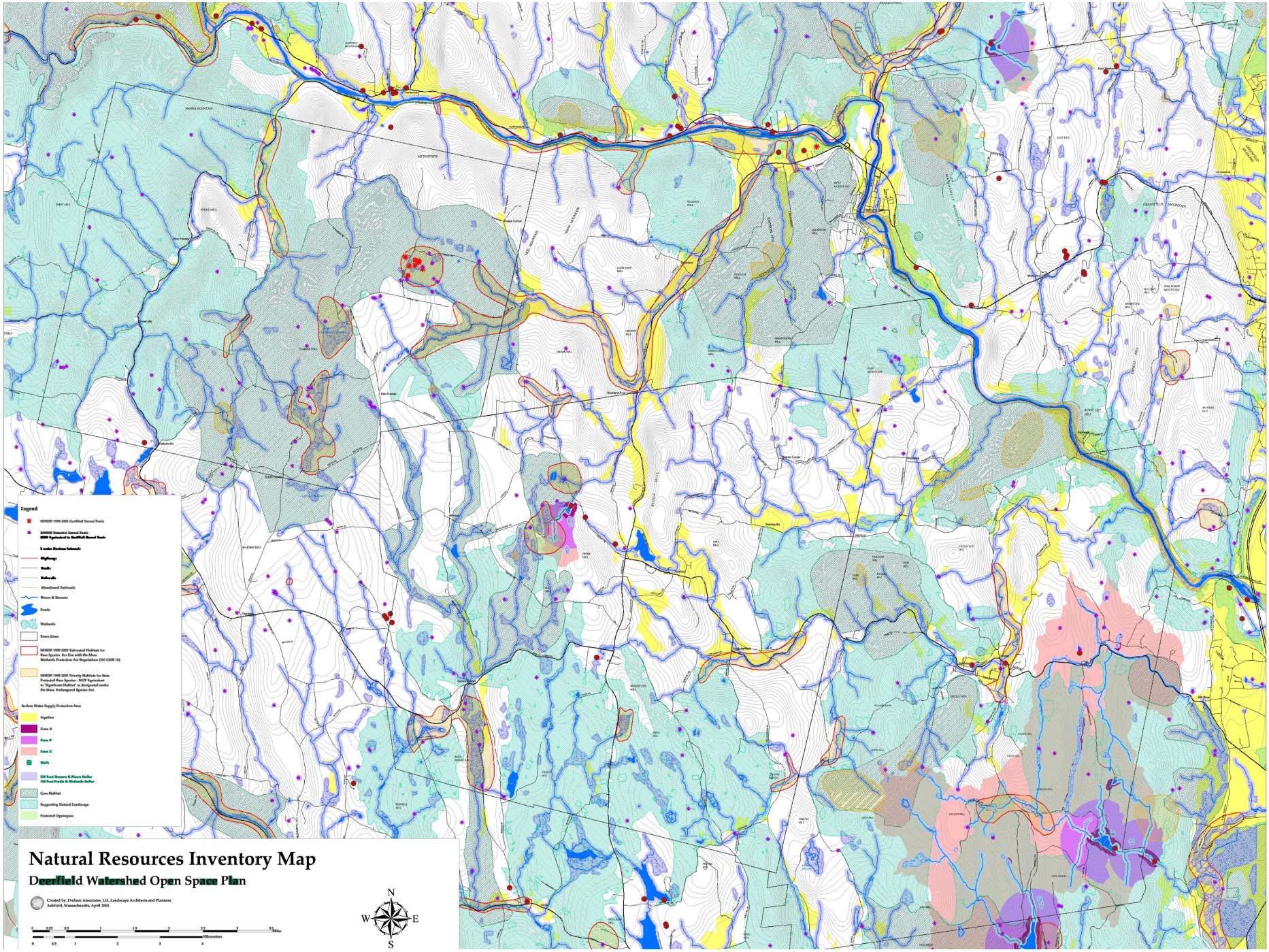
The procedures and products of the local invntory and analysis process were designed to make it easy to compile a plan of *regional* open space priorities. As shown by the maps on the following pages, this process produced much the same series of separate inventory maps for natural, cultural and recreational resources as that produced on the local level. Reviewed by participants in the two regional workshops, these maps were revised to reflect the priorities of those in attendance.

It is clear from this process that the very integration of so many types of resources into the plans makes it difficult to establish a single list of priorities or action steps to which everyone can agree. Different groups will continue to focus on preserving those areas for which they have a specific mission. It is hoped, however, that using these maps, local boards and commissions can build a better understanding of the landscape, and partner up with other groups to protect areas that are critical to the character and quality of life of all those who live and work in the watershed.

Inventory of Natural Resources

Natural resources of the greatest interest and potential value to local residents were identified through the work of the local committees in each community, working primarily with data available on MassGIS. Several themes emerged as having critical value: biodiversity, wildlife habitat and water supply. In consultation with local ecologists, The Nature Conservancy, and state biologists, it was determined that critical biodiversity resources could be identified by mapping riparian corridors, large forest blocks, wetlands, and documented rare species habitats. This was supplemented by overlaying the state Biomap layers for Core Habitat and Supporting Natural Landscape. Water supply was identified by showing the aquifers (yellow) and surface water supply protection areas (pink and purple) from state data.

The complexity of the resulting map demonstrates the way the five town region is shot through with natural diversity -- in fact it might be easier to find places that are <u>not</u> important for natural resources than the opposite. The map on the following pages shows how they may be simplified and grouped into a single map of priority natural resource areas and corridors.


Legend
Natural Resources Inventory Map
Deerfield Watershed Open Space Plan
Created by: Dodson Associates, Ltd.,Landscape Architects and Planners
Ashfield, Massachusetts, April 2003.
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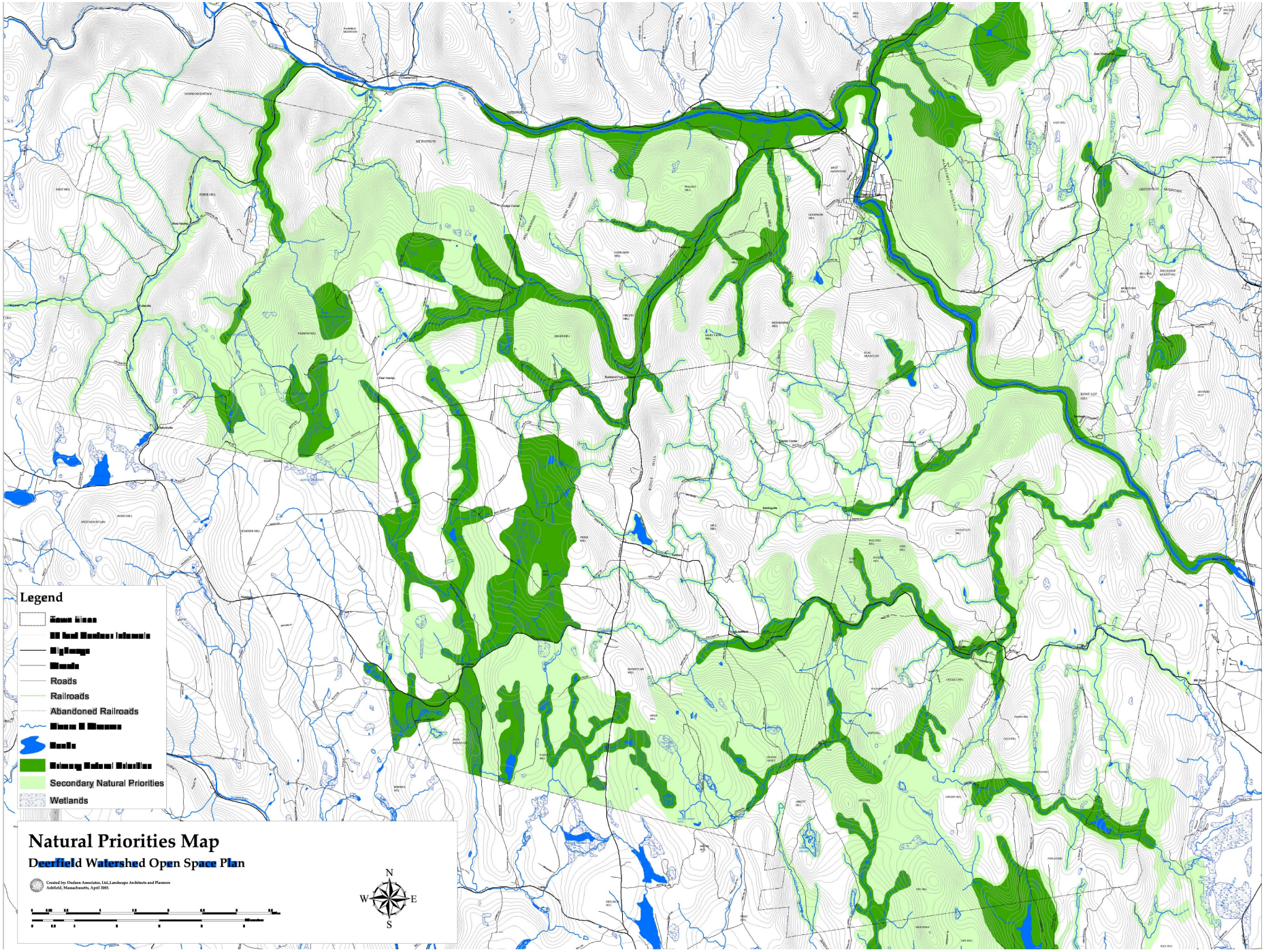
Natural Resource Priorities

By identifying those areas with a concentration of different natural resources, this map highlights the ecological structure of the region, and emphasizes the connection between water supply and biodiversity. The dark green areas represent those with the greatest ecological importance, combined with protection of municipal water supplies. The Clesson Brook, Swift River, and South River Valleys, together with the Deerfield river, are all important natural resource areas. Surrounding these high priority areas are secondary natural resource priorities, shown in light green. Many of these are composed of large areas of undisturbed forest and wetland complexes, important both for wildlife habitat and protection of surface and groundwater quality.

The overall pattern that emerges is very much tied to the underlying form of the landscape. The important ecological corridor represented by the Deerfield River, extends up its tributaries to the high ground of the plateau that extends from Goshen through Ashfield into Hawley. This flat, till-covered, and poorly-drained area is cut with innumerable streams and wetland pockets, and is critical to the water quality for the headwaters of many tributary streams in both the Deerfield and Westfield River watersheds.


Legend
Roads
Railroads
Abandoned Railroads
Secondary Natural Priorities
Wetlands
Natural Priorities Map
Deerfield Watershed Open Space Plan
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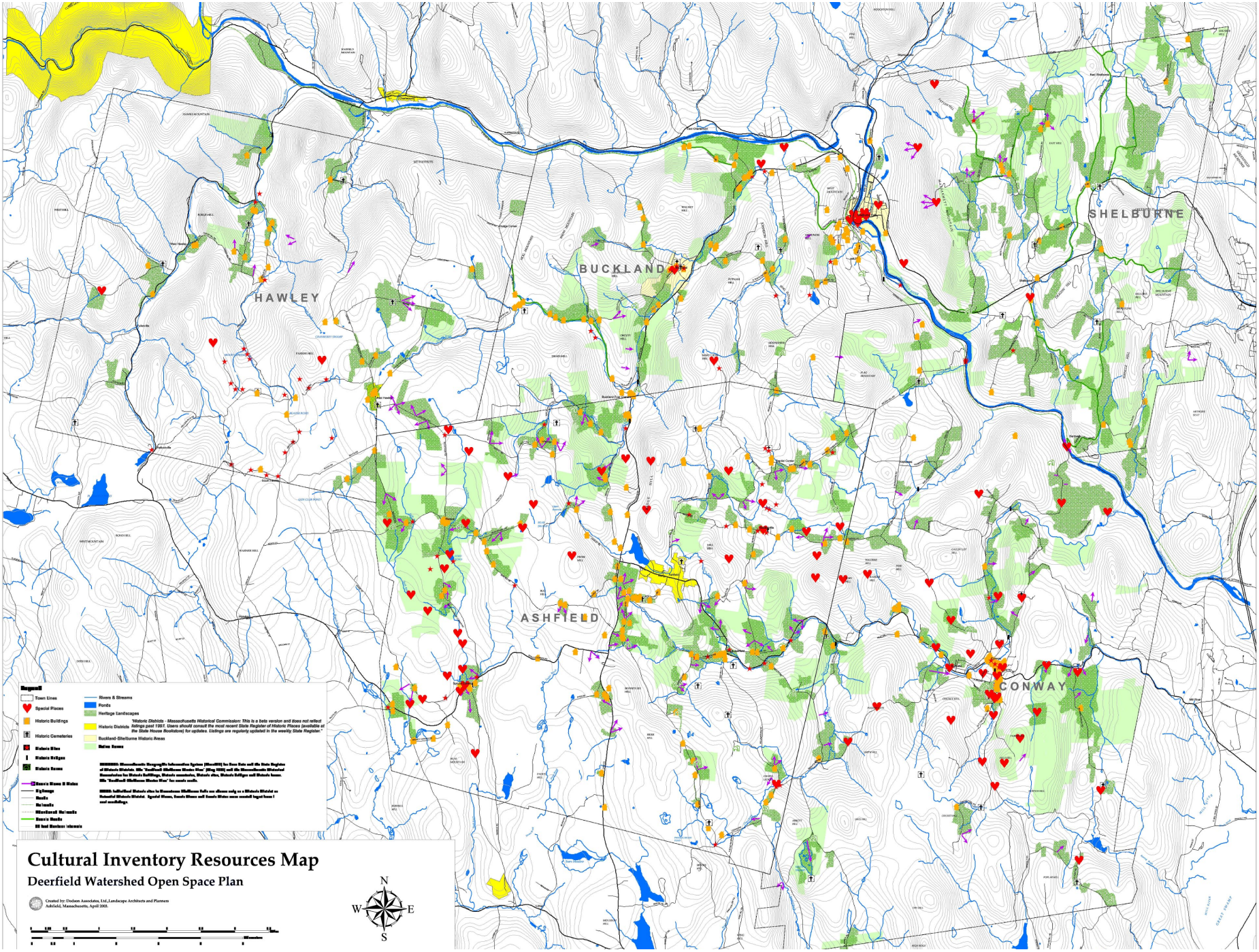
Inventory of Cultural Resources

Three types of cultural resources were inventoried and assessed. Each of these shares the common element of being important to the history, present lifestyle, or future livability of the region. The first category includes historic sites, which were digitized from state and local inventories, and additional historic data mapped by volunteers in each community. Another type of historic element are heritage landscapes. These historic agricultural or mill landscapes, many still in active use, have the potential to serve as "living museums" of the Deerfield Watershed's rich cultural history. The second group includes scenic resources, which were compiled from the Massachusetts Landscape Inventory and locally identified scenic roads and scenic areas. The third type of cultural resources were "special places," which are meant to include locations in each town that are important to the daily life or character of the community. These were identified by the local volunteer committees, and represented by the red hearts on the maps, since they are "places in the heart."


HAWLEY
BUCKLAND
SHELBURNE
ASHFIELD
CONWAY
Cultural Inventory Resources Map
Deerfield Watershed Open Space Plan
Created by: Dodson Associates, Ltd.,Landscape Architects and Planners
Ashfield, Massachusetts, April 2000.
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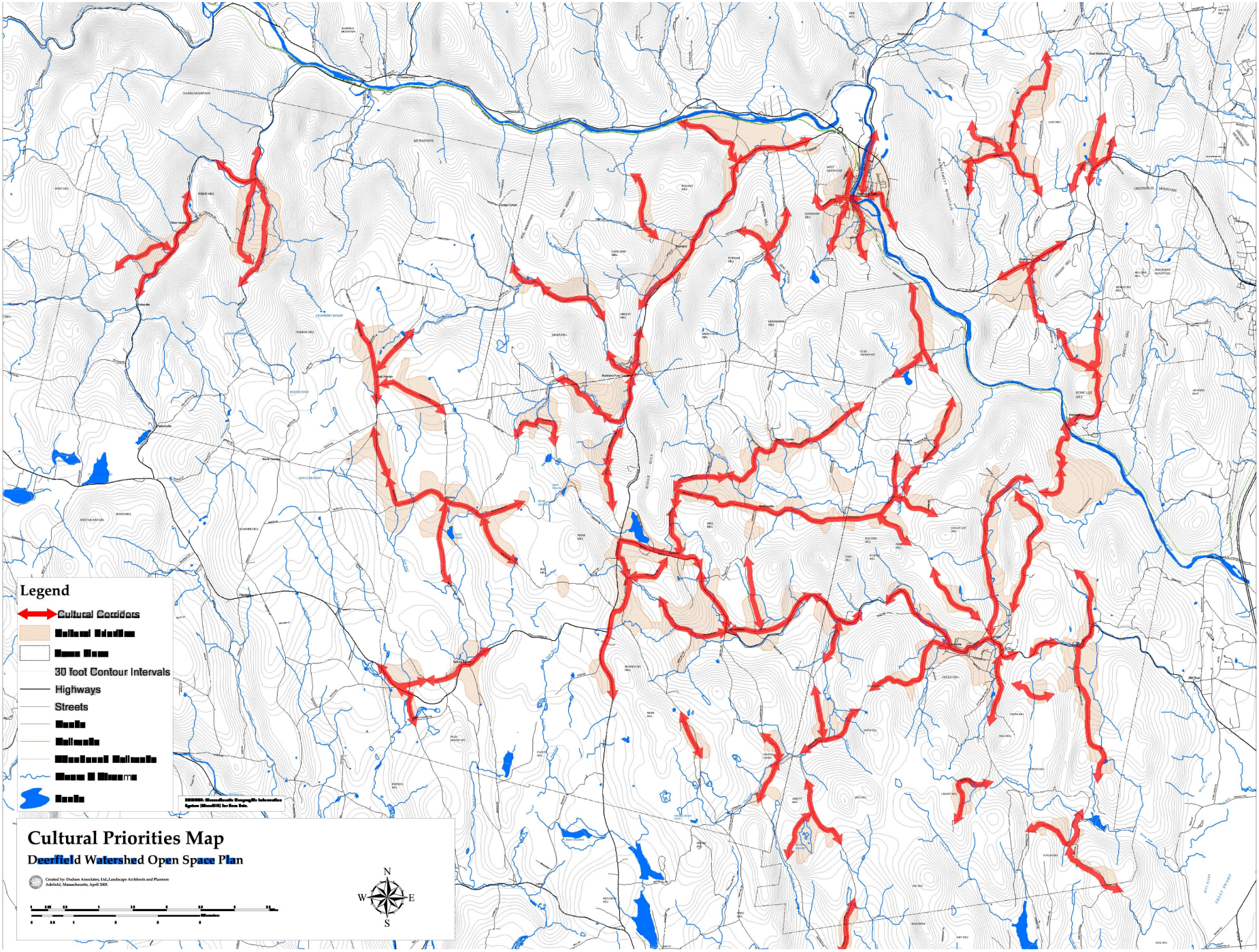
Cultural Resource Priorities

Based on the initial inventory of cultural resources, areas with a high concentration of valuable elements were grouped into "heritage areas." Each of these areas represents a special combination of cultural resources: traditional agricultural landscapes; historic villages, farmsteads and mill sites; scenic corridors; and special places that are important to local residents. As shown on this map of Cultural Resource Priorities, these resources tend to follow other landscape elements, which might be natural features such as river valleys, or cultural features like historic highway or rail corridors. What this map suggests is that by protecting a relatively limited number of key corridors, we can preserve the cultural landscapes that give the Deerfield Watershed its unique visual character and quality of life.

This map also illustrates that open space planning cannot be separated from the region's historic village and town centers, which have always been closely linked to the landscapes around them. By planning for each of these areas as a continuous cultural corridor, communities can continue to grow and evolve while protecting their essential character and historical integrity.


Legend
Cultural Corridors
30 foot Contour Intervals
Highways
Streets
Cultural Priorities Map
Deerfield Watershed Open Space Plan
Created by: Dodson Associates, Ltd.,Landscape Architects and Planners
Ashfield, Massachusetts, April 2003.
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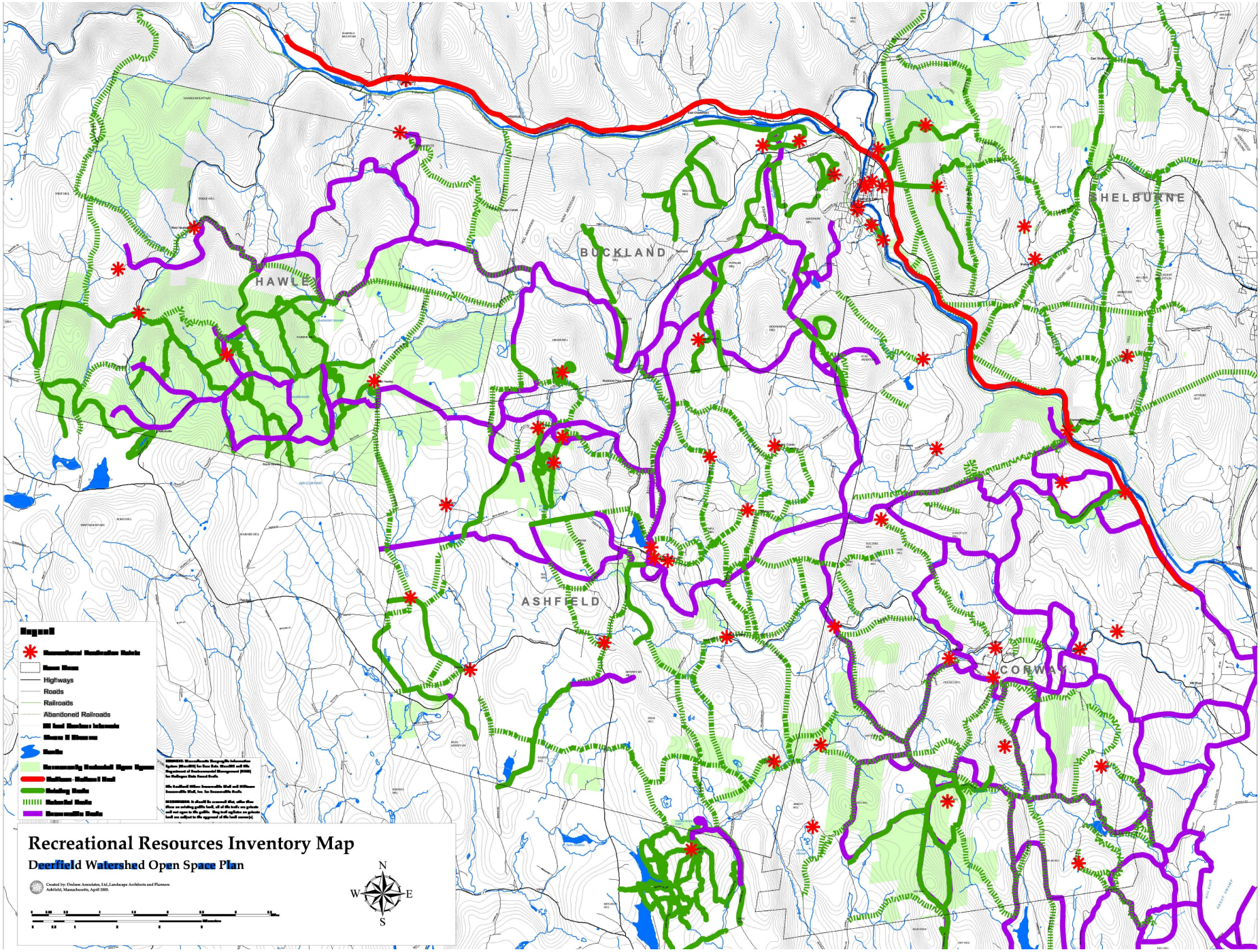
Inventory of Recreational Resources

The recreational resources map was compiled by volunteers from each town, along with data from Massachusetts GIS and the Franklin Council of Governments. What is shown here is a simple composite of all the local maps

For the purpose of this study, the inventory focussed on trail corridors for hiking (green) and snowmobiling (purple). Existing trails or marked routes are shown with a solid line, while proposed connections are dashed. Major and minor destination points were also identified within this system (red stars), to illustrate the possibility of trails that link important sites of natural or cultural interest, rest and refreshment, transit or parking centers, etc. Shown as a red line is the existing Mahican-Mohawk trail, which follows the Deerfield river and provides a connection to the Connecticut river valley.

Existing trails are concentrated in the Hawley State Forest, the DAR and Conway State Parks, and in a few private conservation areas. The extensive snowmobile network has been laid out and maintained by the local snowmobile clubs, whose diligence in securing permission from landowners and educating users is a model for those interested in creating a permanent system of hiking trails.


BUCKLAND
HAWLEY
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ASHFIELD
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Recreational Resources Inventory Map
Deerfield Watershed Open Space Plan
Created by: Dodson Associates, Ltd.,Landscape Architects and Planners
Ashfield, Massachusetts, April 2003.
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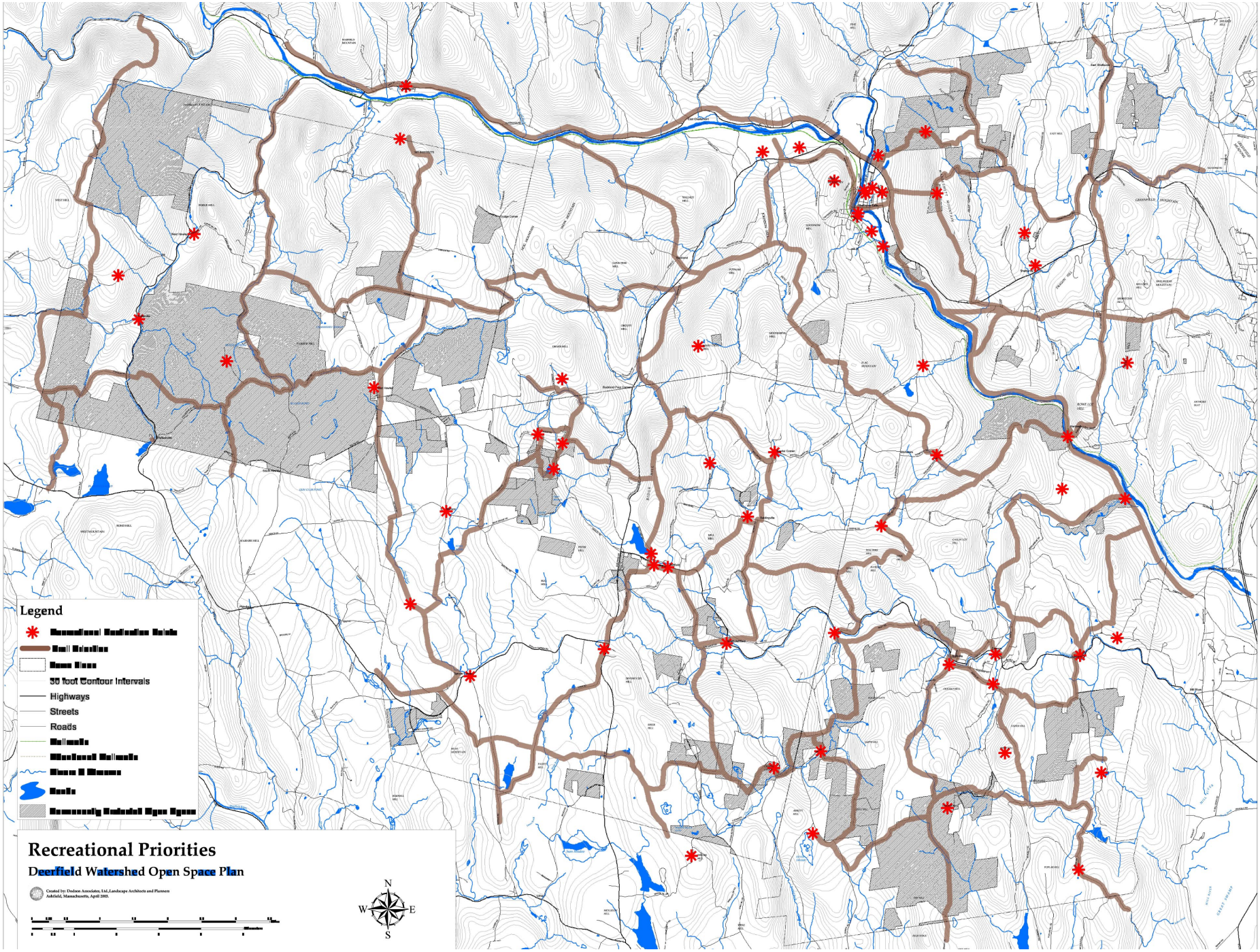
Recreational Resource Priorities

Regional trail priorities were selected in consultation with attendees at the regional workshops. From the compilation of all possibilities shown on the previous page, regional routes were selected that connect and extend existing trails systems, and provide the best access to natural and cultural resource areas and key destination points. Trails, shown in light brown, are designed to form a continuous network of pedestrian routes connecting every neighborhood and village center to the surrounding landscape . The network would tie into the existing Mahican-Mohawk trail along the Deerfield River, and provide logical connections south to a similar network now being planned for the Westfield River.

While most of the existing trails are on public conservation land or water bodies, filling the gaps in the proposed network would require additional easements across private lands, acquisition of important parcels, and coordination of access and parking lot development. Many of these elements could be accomplished in conjunction with preservation activities for natural or cultural resources being considered for other reasons.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30 foot Contour Intervals
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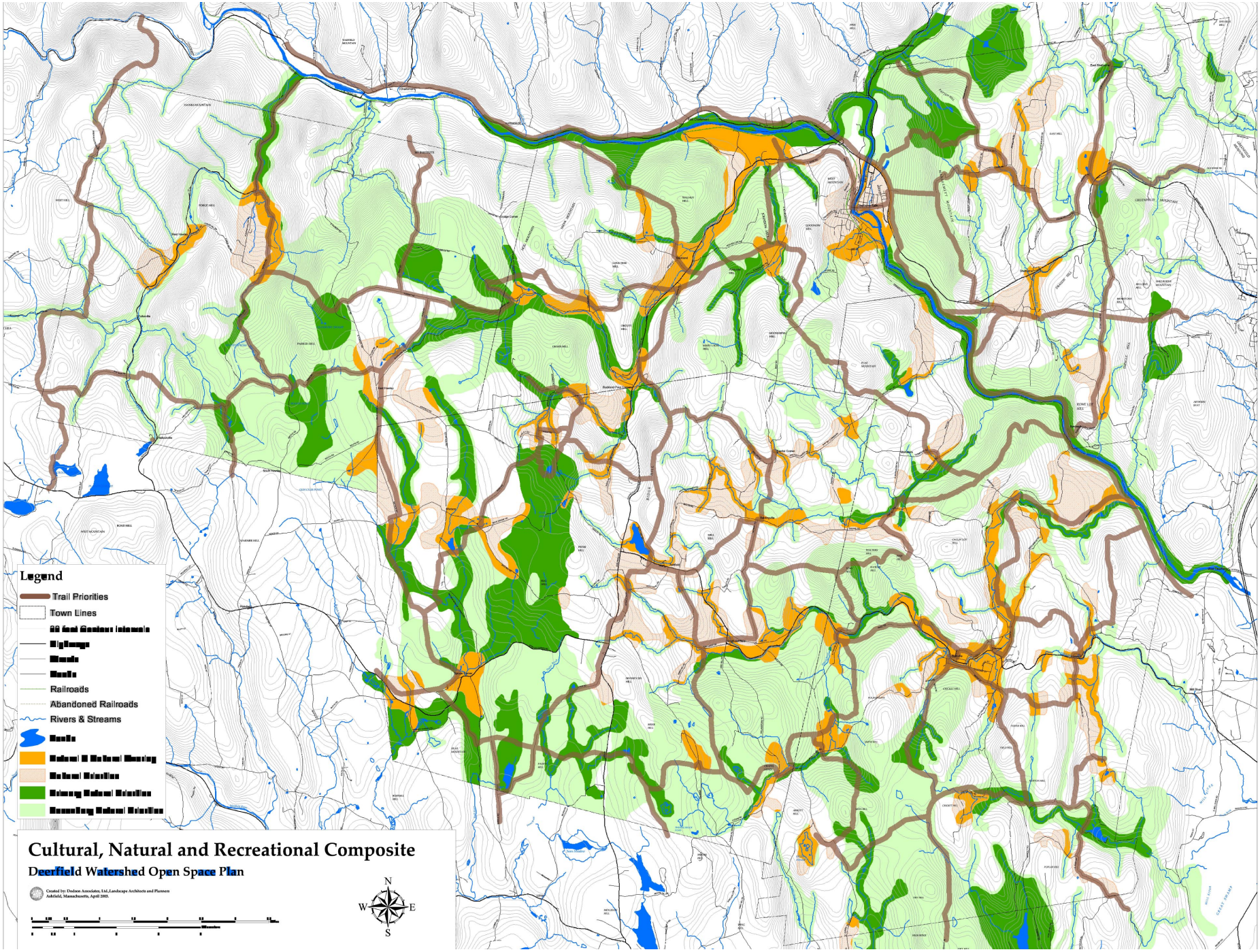
Composite Resource Priorities

While many groups will continue to base their priorities on a particular mission focus or funding source, one of the goals of this project is to look for areas where Natural, Cultural, and Recreational resources converge. The map at right shows these concentrations of multiple resource types. In dark green are the natural resource priorities, with secondary natural priorities in light green. Important cultural districts are shown in tan hatching. Areas where natural and cultural resources overlap are shown in orange. Finally, the priority recreational system is shown in light brown lines.

This map highlights areas and corridors with an unusual concentration of different open space resources: because of the value of these areas to the visual character and quality of life in the watershed, they should be studied closely as part of an ongoing "landscape preservation plan." Some of these areas, such as the Clesson Brook valley in Buckland, have been recognized in previous studies, but many have not, including the South River Valley through Conway and Ashfield, the Bear River and Swift River Valleys in Ashfield, and the Chickley River Valley in Hawley. That these river valleys turn out to contain the most important concentration of natural and cultural resources is itself a revealing indication of the natural and cultural history of the region.


Legend
Trail Priorities
Town Lines
Railroads
Abandoned Railroads
Rivers & Streams
Cultural, Natural and Recreational Composite
Deerfield Watershed Open Space Plan
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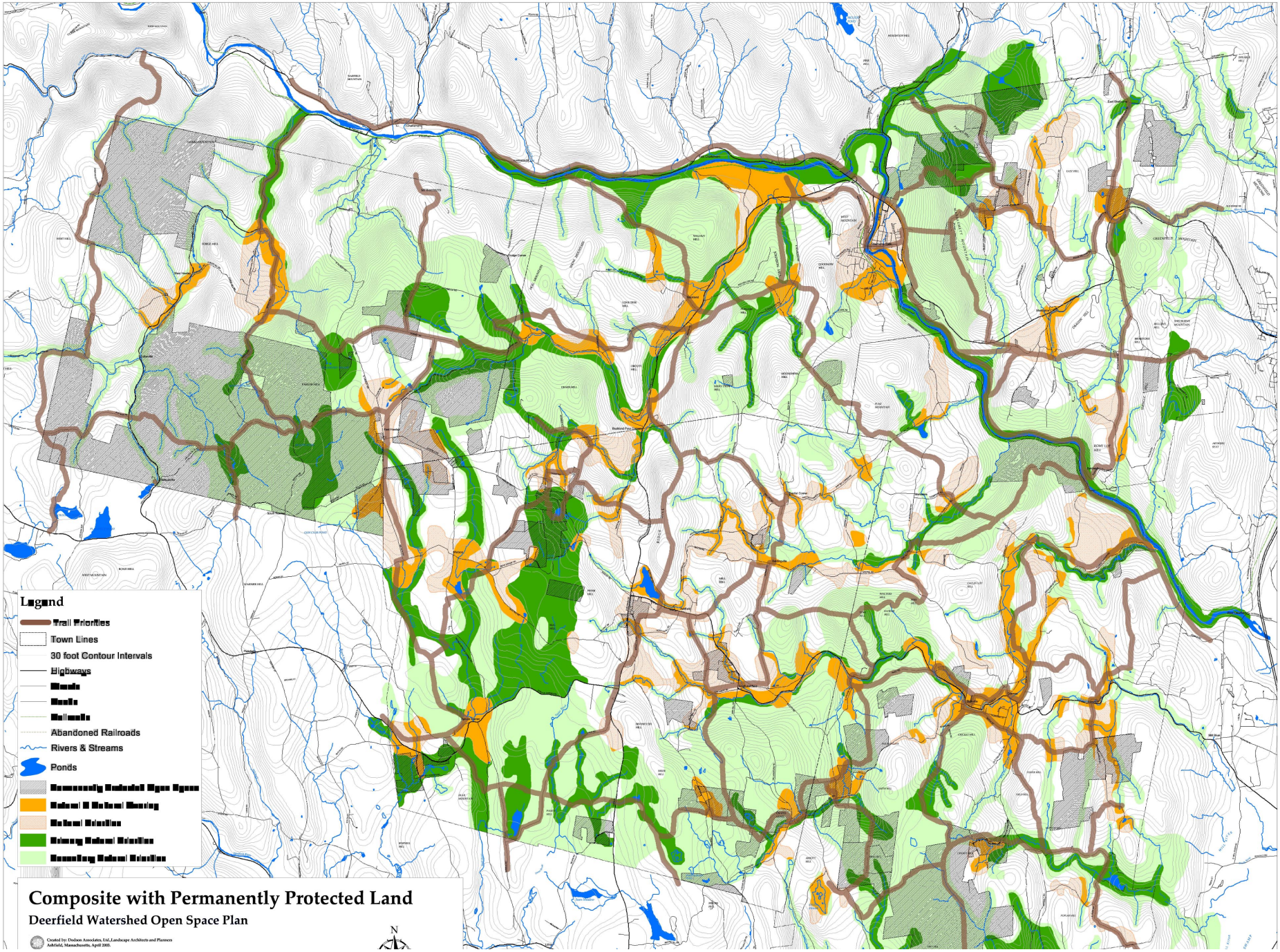
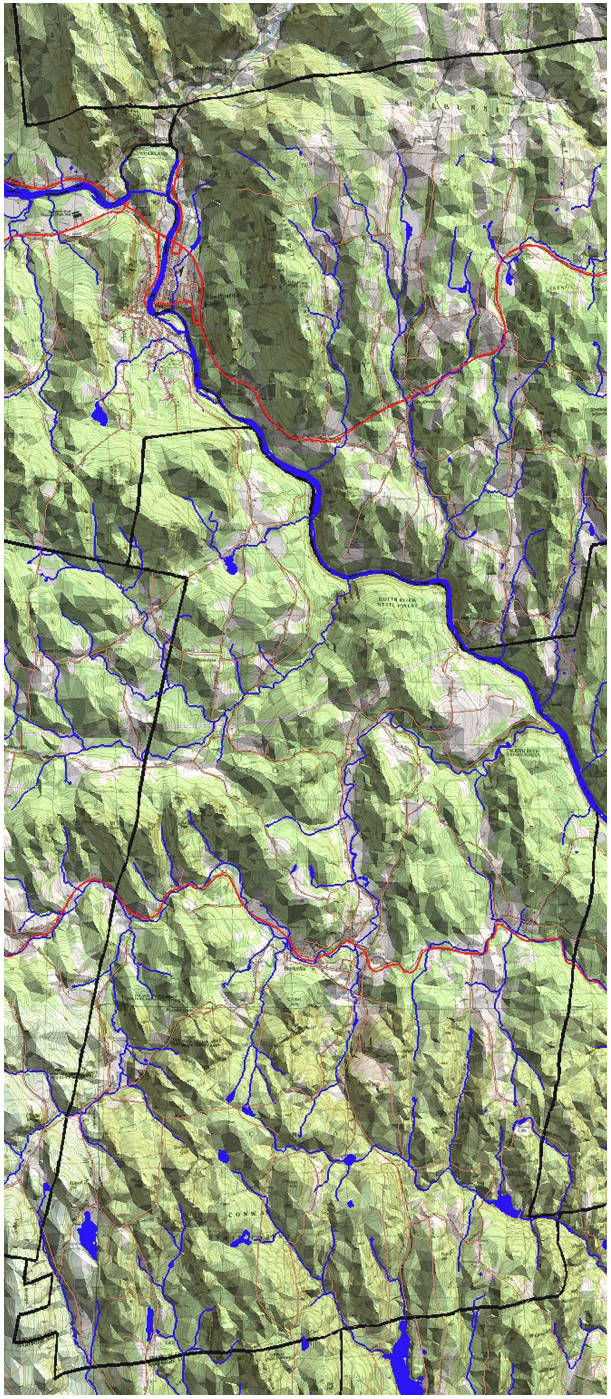
Composite Resource Priorities With Protected Land

Comparing the previous map with this map showing land which is already protected (cross-hatching) reveals how few of the areas with both cultural as well as natural resource value have been protected. In fact most of the conservation areas and state park lands are entirely natural. While these have immense value for protection of natural habitat and water supplies, the Deerfield Watershed's historic landscapes and village centers remain vulnerable to continued development.

While different groups will continue to address conservation from a variety of perspectives, an effort to protect the *character-defining* areas of the region would focus on the areas shown in yellow. Further study of these focus areas will reveal many opportunities to combine conservation of sensitive natural resources with protection of historic sites and landscapes. Rich opportunities for recreational development also exist, including providing access to special natural and cultural sites, and building trails for recreation and historical interpretation. At the same time, growth can continue within many areas -- but that growth should be focused on revitalized village centers and carefully-planned development in the surrounding countryside.


Legend
Trail Priorities
Town Lines
30 foot Contour Intervals
Highways
Abandoned Railroads
Rivers & Streams
Ponds
Composite with Permanently Protected Land
Deerfield Watershed Open Space Plan
N



Throughout the local and regional planning process, three dimensional GIS images were developed to help participants understand the physical structure of the landscape and why it looks and functions as it does. A view looking up the south river valley in Conway (left) is based on the MassGIS color orthophotography, draped over a 3D model of the town in ArcView 3D Analyst software. This allows the user to take a familar section of a USGS quadrangle and look at it in a new way, such as this view of Conway and Shelburne (right), or an oblique view of Shelburne Falls and the Deerfield river (below). Other GIS information can be placed over such base images to emphasis town boundaries (red lines) and water bodies (blue).